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(54) Vehicle Seat with Power-Actuated Adjustment  
 Mechanism

(57) The invention relates to a vehicle seat with a power-actuated adjustment mechanism and with a device for accessing the space behind the vehicle seat. In order to minimize the number of adjustment and actuation mechanisms it is proposed that the access device be designed as a control device for controlling the power elements for the vehicle seat adjustment mechanism, wherein, upon reception of a first switching signal this control device moves the seat to a final forward position, and upon reception of a second switching signal returns the seat to its original position.

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## Description

The invention relates to a vehicle seat with a power-actuated adjustment mechanism, pursuant to the preamble to patent claim 1.

Conventional vehicle seats, especially those in more highly equipped vehicles, nowadays are power adjustable, i.e. upon emission of a signal, ordinarily from one or more controllers, the vehicle seat is adjusted with respect to its longitudinal position and its seat back inclination, and if necessary with respect to other degrees of freedom. In vehicles in which a bench seat is positioned behind these seats, but there is no access to this bench seat through a specifically allocated vehicle door, it is further provided that the vehicle seat back can be manually unlatched and folded forward in order to provide access to the bench seat.

With this as the prior art, the object of the invention is to create a vehicle seat with a power-actuated adjustment mechanism and with a device for allowing access to the space behind the vehicle seat, in which the number of control and actuating mechanisms is reduced.

This object is attained according to the invention with the characterizing features of claim 1. Therein it is proposed that the access device be designed as a control device for controlling the power elements of the vehicle seat adjustment mechanism, wherein, upon reception of a first switching signal this control device moves the seat to a final, forward position, and upon reception of a second switching signal returns the seat to its original position. With this design for the access device as a control device, no additional mechanical components are required to comprise an access device; instead, only the elements that are otherwise present for seat adjustment are used. In this manner the design and structural costs necessary for the vehicle seat are significantly reduced.

Advantageous further improvements on the invention are disclosed in the sub-claims.

It is proposed therein that the power element be made to act upon the inclination position of a vehicle seat back, wherein upon reception of a switching signal the seat back is moved to a forward-tilted final position, and access to the space behind the vehicle seat is opened up.

It is further proposed that the adjustment to the final position be implemented at the highest possible adjustment speed, while the adjustment to the original seating position should begin at the highest possible adjustment speed, however as the original seating position is approached, the adjustment speed should be decreased. In this manner the risk of pinning or otherwise pressing people and objects in the space behind the vehicle seat is reduced.

It is supplementarily proposed that a switch be positioned on a vehicle seat back for the purpose of generating the switching signals. In this manner the operation of the access device is logically improved, since even with mechanically actuated access devices the actuating device is most frequently located on the vehicle seat back.

Finally it is proposed that in addition to the seat back, the vehicle seat cushion also be included in the adjustment as a part

of the access device. In this manner the spatial cross-section through which access to the space behind the vehicle seat is granted is further enlarged, thereby facilitating use of this space.

Below, the invention is described in greater detail with reference to the exemplary embodiment illustrated in the sole figure.

A vehicle seat 1 is comprised of a seat cushion 2 and a seat back 3. The seat cushion 3 [sic] can be longitudinally adjusted by means of a first electric motor 4, and the seat back 3 can be pivoted by means of a second electric motor 5. Both electric motors 4, 5 are actuated by means of a control device 6, which in turn receives signals from a switch block 7 to start the electric motors 4, 5 and thereby to adjust the vehicle seat 1 in terms of its longitudinal position relative to a chassis 8, and to pivot the seat back 3 relative to the seat cushion 2.

Behind the vehicle seat 1, stationarily attached to the chassis, a bench seat 9 is positioned. In order to allow access to this bench seat 9, a further switch 10 is arranged on the seat back 3, and is connected to the control device 6. When this switch 10 is actuated, first the current positions of the seat cushion 2 and the seat back 3 are stored in the control device 6. The vehicle seat 1 is then moved to its forward and forward-tilted final position, indicated by dashed lines, in that the control device actuates the electric motors 4, 5 in a corresponding manner. If an adjustment of the vehicle seat 1 at multiple speed stages is provided, this adjustment now takes place at the highest possible speed. Instead of storing the seat's position it is possible to register the adjustment of the vehicle seat 1, so that the adjustment movement required to reach the final position can be recorded and subsequently repeated in reverse.

Upon reception of a second signal by the switch 10, the control device 6 now returns the vehicle seat 1 to the position that was stored before the adjustment began. If an adjustment of the vehicle seat at multiple speed stages is provided, at least the final phase of the approach to the stored position takes place at a slower adjustment speed.

In any case the adjustment of the vehicle seat 1 takes place only when the switch 10 is actuated, so that the adjustment can be interrupted at any time by releasing the switch 10, if the risk of pinning a person or object is recognized. To ensure against unintended actuation, it is further provided that the control device 6 will implement an adjustment only if the vehicle door that is allocated to the vehicle seat 1 is open.

The switch 10, in conjunction with a correspondingly designed control device 6 and the two electric motors 4, 5, form an access device 11 for the bench seat 9. If spatial conditions will permit this, it may also be sufficient for the function of the access device only to pivot the seat back 3 forward and to eliminate a longitudinal adjustment of the seat cushion 2.

Naturally, use of the access device 11 is not limited to the arrangement of the vehicle seat 1 and bench seat 9 depicted in the present example, rather it is generally applicable in any case in which access to the space behind the vehicle seat 1 is to be allowed.

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Patent Claims

1. Vehicle seat (1) with a power-actuated adjustment mechanism, with at least one power element (4, 5) for adjusting the vehicle seat (1) or portions (2, 3) thereof, and an access device (11) for accessing space (9) behind the vehicle seat, characterized in that the access device (11) comprises a control device (6) for actuating the power element (4, 5), wherein the control device (6), upon reception of a first switching signal, moves the seat to a forward, final position, and upon reception of a second switching signal returns the seat to its original position.
2. Vehicle seat pursuant to claim 1, characterized in that the power element (5) acts upon the inclination level of a seat back (3) of the vehicle seat (1), and the control device moves the seat back (3) to a forward-tilted final position.
3. Vehicle seat pursuant to claim 1 or 2, characterized in that the adjustment to the final position is implemented at the highest possible adjustment speed, and the adjustment to the original seat position takes place initially at the highest possible adjustment speed, however as it approaches the original seating position it slows to a reduced adjustment speed.
4. Vehicle seat pursuant to claim 1, 2 or 3, characterized in that a switch (10) for emitting the switching signals is positioned in the seat back (3).
5. Vehicle seat pursuant to one of the preceding claims, characterized in that the control device (6) of the access device (11) additionally actuates a power element (4) that is connected to the seat cushion (2), and this actuation is implemented in the same manner as the actuation of the power element (5) for the seat back (3).

1 page(s) of drawings attached

DRAWINGS PAGE 1

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